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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,054	09/08/2003	Sam C. Werner	TUC920030060US1	5482
35825	7590	04/03/2006	EXAMINER	
LAW OFFICE OF DAN SHIFRIN, PC - IBM			ASSESSOR, BRIAN J	
14081 WEST 59TH AVENUE			ART UNIT	
ARVADA, CO 80004			PAPER NUMBER	

2114

DATE MAILED: 04/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/658,054	WERNER ET AL.	
	Examiner	Art Unit	
	Brian J. Assessor	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-20 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>9/8/2003</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 8-10, 14, 15, 17, 19, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Crockett (6,842,834)

The applied reference has a common Assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As per claim 1, Crockett teaches:

A method for initiating a data storage facility recovery process in a data processing system having a first peer data storage facility and a second peer data storage facility communicating with the first peer data storage facility by a communication link, the method comprising:

executing a first write operation to store data from a host computer to the first peer data storage facility; (Crockett column 6, line 65 – column 7, line 2)

executing a second write operation to copy the stored data over the communication link (Crockett column 7, lines 8-10) from the first peer data storage facility to the second peer data storage facility; (Crockett column 7, lines 21-28)

monitoring the data associated with the second write operation to determine if the data contains an error; (Crockett column 7, lines 16-20)

instructing the first peer data storage facility to initiate a first error recovery operation on the first peer data storage facility upon detection of the error. (Crockett column 10, lines 44-48; resynchronization is a form of error recovery.)

As per claim 3, Crockett teaches:

The method of claim 1 wherein the first error recovery operation comprises issuing a device specific control function causing a warmstart on the first peer data storage facility. (Crockett column 10, lines 44-48; resynchronization is the same process as warm start error recovery.)

As per claim 8, Crockett teaches:

The method of claim 1 further comprising instructing the second peer data storage facility to initiate a second error recovery operation on the second peer data storage facility upon detection of the error (Crockett column 10, lines 28-32; resynchronization is a form of error recovery.)

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As per claim 9, Crockett teaches:

The method of claim 1 further comprising:

instructing the second peer data storage facility to respond to the first peer data storage facility in association with the second write operation; (Crockett column 7, lines 61-65; the volumes initialize with one another before reading and writing to one another.)

monitoring the response to detect if the response indicates a problem with the second write operation; (Crockett column 7, lines 16-20)

instructing the second peer data storage facility to initiate a second error recovery operation on the second peer data storage facility upon detection of the problem with the second write operation. (Crockett column 10, lines 28-32; resynchronization is a form of error recovery.)

As per claims 10:

Claim 10 is system claim corresponding to the method claim 1. Therefore, claim 10 is rejected for the same rationale set forth in claim 1.

As per claim 14:

Claim 14 is a system claim corresponding to the method claim 9. Therefore, claim 14 is rejected for the same rationale set forth in claim 9.

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As per claims 15:

Claim 15 is an article of manufacture claim corresponding to the method claim 1.

Therefore, claim 15 is rejected for the same rationale set forth in claim 1.

As per claim 17:

Claim 17 is an article of manufacture claim corresponding to the method claim 3.

Therefore, claim 17 is rejected for the same rationale set forth in claim 3.

Claims 19 and 20 respectively are article of manufacture claims corresponding to the method claims 8 and 9. Therefore, claims 19 and 20 are rejected for the same rationale set forth in claims 8 and 9.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 11, and 16 are rejected under 35 U.S.C. 103(a) as being obvious over Crockett (6,842,834) in view of Yanai (6,173,377).

The applied reference has a common Assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome

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by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

As per claim 2:

Crockett does not explicitly disclose a device wherein instructing the first peer data storage facility by communication over a second communication link, separate from the first communication link.

In column 9, lines 8-18; Yanai clearly discloses a system, which uses additional communication links when dealing with a failure occurs. It would have been obvious to a person of ordinary skill in the art at the time of invention to include the additional lines as taught by Yanai, in order to create a more failure resistant system. This would have been obvious because Yanai clearly teaches that the above process is better suited for better performance with a mirrored backup process. (Yanai column 2, lines 22-29)

Claim 11 is a system claim corresponding to the method claim 2. Therefore, claim 11 is rejected for the same rationale set forth in claim 2.

Claim 16 is an article of manufacture claim corresponding to the method claim 2. Therefore, claim 16 is rejected for the same rationale set forth in claim 2.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crockett (6,842,834) in view of Nelson (5,928,367).

As per claim 4:

Crockett fails to explicitly disclose a device which analyzes a running text log buffer associated with the second write operation to detect the trigger event.

In column 3, lines 19-31; Nelson clearly discloses a system where a disk controllers (20 and 25) analyze each access looking for abnormalities, wherein in each controller buffers are present (figure 3). It would have been obvious to a person skilled in the art at the time of invention to include the running log as taught by Nelson in order to improve error detection and correction in the backup process. This would have been obvious because Nelson clearly teaches that the above process is better suited for a superior disk mirroring operation with reliable failover. (Nelson column 1, lines 45-49)

Claims 6, 7, 12, 13, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crockett (6,842,834) in view of Galipeau (6,308,283).

As per claim 6:

Crockett fails to explicitly disclose a method for directing the first peer data storage facility to store a first root cause data set upon instruction to initiate the first error recovery operation.

In column 10, lines 35-39; Galipeau clearly discloses a system which maintains an error log, where when an error occurs during the backup process it is stored in the log for troubleshooting purposes. It would have been obvious to a person of ordinary skill in the art at the time of invention to include the error log method as taught by Galipeau in order to create a better error record for error recovery purposes. This would have been obvious because Galipeau clearly teaches the above method is better suited for real time mirroring processes. (Galipeau column 1, lines 63-67)

As per claim 7:

The method of claim 6 wherein the first root cause data set comprises:
a record of the state of the first peer data storage facility at the time of determination of the error; (Galipeau column 10, lines 35-39)

a continuous event log buffer. (Galipeau column 10, lines 35-39; an error log is a continuous event log buffer)

Claims 12 and 13 respectively are system claims corresponding to the method claims 6 and 7. Therefore, claims 12 and 13 are rejected for the same rationale set forth in claims 6 and 7.

Claim 18 is an article of manufacture claim corresponding to the method claim 6. Therefore, claim 18 is rejected for the same rationale set forth in claim 6.

Allowable Subject Matter

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Assessor whose telephone number is (571) 272-0825. The examiner can normally be reached on M-F 8:30-5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571)272-3644. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BA



SCOTT BADERMAN
SUPERVISORY PATENT EXAMINER